

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc. Winter 2018-19 Examination

Semester:1**Subject Code: 11205104****Subject Name: Analytical Chemistry-I****Date:07/12/2018****Time:10:30am to 01:00pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1. A) Answer the following questions

- (a) Describe the principles and the components of gas chromatography (04)
(b) Describe the detectors used in gas chromatography (04)

Q.1. B) Answer the following question (Any two)

- (a) 1. Write a note on glass electrodes (02)
2. Compare TLC and HPLC (02)
(b) Write a note on non-aqueous titration (04)
(c) Explain HETP (04)

Q.2. A) Answer the following questions.

- (a) 1. Write a note on stationary phase and mobile phase (02)
2. Briefly explain about the carrier gas used in GC (02)
(b) Compare WCOT, SCOT and PLOT columns (04)

Q.2. B) Answer the following questions (Any two)

- (a) Describe the different types of chromatography (03)
(b) Write a note on super critical fluid chromatography (03)
(c) What ion sources are commonly used for GC-MS (03)

Q.3. A) Answer the following questions (Each of 04 marks)

- (a) Explain the principle and Instrumentation of TGA (08)
(b) Write in Brief about DSC

Q.3. B) Answer the following questions (Any two)

- (a) 1. Write down the applications of TGA (02)
2. Write in brief the factors affecting TGA (02)
(b) Write a note on thermometric titration (04)
(c) Differentiate DSC and DTA (04)

Q.4. A) Answer the following questions.

- (a) Explain Laue method in XRD analysis (04)
(b) Write a short note on electro diffraction (04)

Q.4. B) Answer the following questions (Any two)

- (a) 1 The Pattern on paper in chromatography is called ----- (03)
2. Most TGA experiments use ----- as purge
3. Minimum interplanar spacing required for Bragg's diffraction is-----
(b) Derive Bragg's equation (03)
(c) Write a note on Scanning electron microscopy (03)
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